

taken by a digital camera can be searched, viewed and printed as easily as with conventional silver-halide picture album and television broadcast can be watched as much as possible.

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WHAT IS CLAIMED IS:

1. An image storage from which the stored image is retrievable comprising:

a built-in memory of a large capacity for storing
10 a plurality of image data taken by a digital camera;
a digital circuit for retrieving desired one of the plurality of image data from the built-in memory;
a connector for electric connection with the digital camera for data transmission therewith;
15 a detector capable of detecting the connection of the digital camera to the connector; and
a controller to have the image storage receive the image data transmitted from the digital camera through the connector to store the same in the built-in memory
20 in response to the detection of the connection by the detector.

2. The image storage according to claim 1, wherein the detector includes a mechanical contact and a sensor for sensing the movement of the mechanical contact.

- 25 3. The image storage according to claim 1, wherein the controller is designed to selectively receive the image data which is retrievable by the digital circuit.

- 30 4. The image storage according to claim 1, further comprising a power source, wherein the controller automatically turns on the power source in response to the detection of the connection by the detector.

- 35 5. The image storage according to claim 1, wherein the function of the controller to have the image storage store the image data is designed to be carried out in accordance with a program, which is started in

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response to the detection of the connection by the detector.

6. The image storage according to claim 1, wherein the controller automatically transmits a signal to the digital camera to turn on the same in response to the detection of the connection by the detector.

7. The image storage according to claim 1, wherein the function of the controller to have the image storage receive the image data is designed to be carried out in accordance with a program, which is started in response to the detection of the connection by the detector.

8. The image storage according to claim 1, wherein the controller includes a program to automatically delete an incomplete image data which may be caused by an interruption of the data transmission from the digital camera.

9. The image storage according to claim 1, wherein the image data is managed in accordance with a directory structure in the digital camera, and wherein the controller has the image storage take over at least a part of the directory structure in the built-in memory when storing the image data transmitted from the digital camera.

10. The image storage according to claim 1, wherein the digital camera is of a type with a rechargeable power source, and the image storage further comprising a second controller to automatically allow the rechargeable power source to be charged in response to a termination of the image data transmission from the digital camera to the image storage.

11. The image storage according to claim 1, wherein the controller automatically transmits a signal to the digital camera to turn off the same in response to a termination of the image data transmission from the digital camera to the image storage.

12. The image storage according to claim 1,

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wherein the digital camera is of a type with a rechargeable power source, and the image storage further comprising a power source, wherein the controller automatically turns off the power source in response to a completion of a charging for the rechargeable power source of the digital camera.

13. The image storage according to claim 1, wherein the controller transmits a signal to the digital camera to delete the image data which has already been transmitted to the image storage and stored in the built-in memory.

14. The image storage according to claim 13, wherein the signal is effective to forcibly delete the image data from the digital camera even if the image data is protected against a deletion according to a digital camera setting.

15. The image storage according to claim 13, wherein an image data protected against a deletion according to a digital camera setting is not deleted by the signal.

16. The image storage according to claim 13, wherein the image storage further comprising a user interface for confirming a user in advance whether or not the signal may forcibly delete the image data from the digital camera even if the image data is protected against a deletion according to a digital camera setting.

17. A digital camera connectable to an image storage which has a storage memory for storing a plurality of image data and a digital circuit for retrieving desired one of the plurality of image data from the storage memory, comprising:

a connector for electric connection with the image storage for data transmission therewith;

a memory for storing image data taken by the digital camera;

a digital circuit for reading out the image data

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from the memory; and

a controller to have the digital circuit read out the image data from the memory to transmit the same to the image storage through the connector in response to the image storage detecting the connection of the connector.

18. The digital camera according to claim 17, wherein the controller is designed to selectively transmit the image data which is retrievable by the image storage.

19. The digital camera according to claim 17, wherein the image data is managed in accordance with a directory structure in the digital camera, and wherein the controller is designed to transmit the image data so as to make it possible for the image storage to take over at least a part of the directory structure in the storage memory when storing the image data transmitted from the digital camera.

20. The digital camera according to claim 17, further comprising a rechargeable power source, and a second controller for automatically allowing the rechargeable power source to be charged in response to a termination of the image data transmission to the image storage.

21. The digital camera according to claim 17, wherein the controller is designed to delete the image data which has already been transmitted to the image storage.

22. The digital camera according to claim 21, wherein the controller is designed to forcibly delete the image data even if the image data is protected against a deletion according to a digital camera setting.

23. The digital camera according to claim 21, wherein the controller is designed not to delete the image data if the image data is protected against a deletion according to a digital camera setting.

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24. The digital camera according to claim 21, further comprising a user interface for confirming a user in advance whether or not the image data may be forcibly deleted from the memory even if the image data is protected against a deletion according to a digital camera setting.

25. A digital camera connectable to an image storage which has a storage memory for storing a plurality of image and a digital circuit for retrieving desired one of the plurality of image data from the built-in memory, comprising:

a first connector for electric connection with the image storage for data transmission therewith;

a memory for storing image data taken by the digital camera;

a digital circuit for reading out the image data from the memory;

a first controller to have the digital circuit read out the image data from the memory to transmit the same to the image storage through the connector;

a rechargeable power source of the digital camera;

a second connector for receiving power to charge the power source; and

a second controller to have the digital camera automatically initiate the charging of the power source with the power through the second connector in response to a termination of the image data transmission to the image storage through the first connector.

26. The digital camera according to claim 25, wherein the first and second connectors are arranged to be simultaneously connectable with the image storage in one action.

27. The digital camera according to claim 26, further comprising a detector capable of detecting the connection of the image storage to the connectors, wherein the first controller is arranged to have the digital circuit read out the image data from the memory

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to transmitted the same to the image storage in response to the detection of the connection by the detector.

28. A digital camera connectable to an image storage which has a storage memory for storing a plurality of image and a digital circuit for retrieving desired one of the plurality of image data from the built-in memory, comprising:

a first connector for electric connection with the image storage for data transmission therewith;

10 a memory for storing image data taken by the digital camera;

a digital circuit for reading out the image data from the memory;

15 a first controller to have the digital circuit read out the image data from the memory to transmit the same to the image storage through the connector;

a rechargeable power source of the digital camera;

a second connector for receiving power to charge the power source;

20 a checker for checking whether or not image data to be transmitted to the image storage exists in the memory; and

a second controller to have the digital camera automatically initiate the charging of the power source with the power through the second connector in response to the connection of the power to the second connector with the checker checking that any image to be transmitted to the image storage does not exist in the memory.

30 29. A digital camera connectable to an image storage which has a storage memory for storing a plurality of image and a digital circuit for retrieving desired one of the plurality of image data from the built-in memory, comprising:

35 a connector for electric connection with the image storage for data transmission therewith;

a memory for storing image data taken by the

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digital camera;

a digital circuit for reading out the image data from the memory;

a power switch; and

- 5 a controller for automatically turning on the power switch in response to the image storage detecting the connection of the connector.

30. A digital camera connectable to an image storage which has a storage memory for storing a plurality of image and a digital circuit for retrieving
10 desired one of the plurality of image data from the built-in memory, comprising:

a connector for electric connection with the image storage for data transmission therewith;

- 15 a memory for storing image data taken by the digital camera;

a digital circuit for reading out the image data from the memory;

a power switch; and

- 20 a controller for automatically turning off the power switch in response to the image storage.

31. A digital camera connectable to an image storage which has a storage memory for storing a plurality of image and a digital circuit for retrieving
25 desired one of the plurality of image data from the built-in memory, comprising:

a connector for electric connection with the image storage for data transmission therewith;

- 30 a memory for storing image data taken by the digital camera;

a first digital circuit for reading out the image data from the memory;

a power switch;

- 35 a first controller to have the first digital circuit read out all the possible image data in the memory to transmitting the same to the image storage through the connector;

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a second digital circuit for erasing the image data from the memory; and

a second controller to have the second digital circuit function to delete all the possible digital image data after the completion of the transmission thereof to the image storage.

32. An image storage connectable to a television set and to a digital camera of a rechargeable type, comprising:

10 a first connector for electric connection with the digital camera for charging the same ;

a power circuit for providing the digital camera with a power to charge the same through the first connector;

15 a second connector for electric connection with the digital camera for data transmission therefrom;

a memory for storing a plurality of image data transmitted from the digital camera through the second connector; and

20 a third connector for electric connection with the television set for data communication therewith.

33. The image storage according to claim 32, wherein the third connector includes a first terminal for receiving a control signal from the television set and a second terminal for transmitting the image data to the television.

34. An image storage connectable to a digital camera of a rechargeable type, comprising:

30 a first connector for electric connection with the digital camera for charging the same;

a power circuit for providing the digital camera with a power to charge the same through the first connector;

35 a second connector for electric connection with the digital camera for data transmission therefrom;

a memory for storing a plurality of image data transmitted from the digital camera through the second

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connector;

a first indicator for informing of the charging through the first connector; and

a second indicator for informing of the data transmission through the second connector.

35. An image storage connectable to a digital camera comprising:

a connector for electric connection with the digital camera for data transmission therefrom;

a memory for storing a plurality of image data transmitted from the digital camera through the connector; and

a controller for transmitting a deletion signal to the digital camera in response to a completion of the transmission of the image data from the digital camera to the image storage, the deletion signal being individually transmitted for each of the image data, whereby the digital camera individually deletes the image data each time the digital camera receives the deletion signal.

36. An image storage connectable to a digital camera comprising:

a connector for electric connection with the digital camera for data transmission therefrom;

a memory for storing a plurality of image data transmitted from the digital camera through the connector; and

a controller for transmitting a deletion signal to the digital camera in response to a completion of the transmission of the image data from the digital camera to the image storage, wherein an image data protected against a deletion according to a digital camera setting is not deleted by the signal.

37. A digital camera connectable to an external device, comprising:

a rechargeable battery;

a digital circuit to which electric power is

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supplied from the rechargeable battery, the digital circuit being designed to communicate with the external device in compliance with a standardized digital data communication system; and

5 an integrated connector through which the rechargeable battery is charged from outside and digital circuit is in communication with the external device.

38. A cable connectable with a digital camera of a rechargeable type, comprising:

a first path for charging the digital camera;

a second path for the digital camera to communicate with an external device in compliance with a standardized digital data communication system; and

15 an integrated connector at which the cable is in contact with the digital camera, the first path and the second path both leading to the integrated connector so that the digital camera is charged from outside and in communication with the external device through the integrated connector.

39. The cable according to claim 38, further comprising a second connector at which the cable is in contact with the external device, the second connector being connected to the second path and shaped in compliance with a standardized digital data communication system.

40. An image storage connectable to a digital camera comprising:

30 a connector for electric connection with the digital camera for data transmission therefrom;

a memory for storing a plurality of image data transmitted from the digital camera through the connector; and

35 a warning circuit for warning that the data from the digital camera is not suitable for the image storage.

41. An image storage connectable to a digital

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camera of a rechargeable type, the digital camera having a removable memory, comprising:

a first connector for electric connection with the digital camera for charging the same;

5 a power circuit for providing the digital camera with a power to charge the same through the first connector;

a second connector for electric connection with the digital camera for data transmission therefrom;

10 a memory for storing a plurality of image data transmitted from the digital camera through the second connector; and

a warning circuit for warning that the removable memory is not set in the digital camera.

15 42. An image storage connectable to a digital camera comprising:

a connector for electric connection with the digital camera for data transmission therefrom;

20 a memory for storing a plurality of image data transmitted from the digital camera through the connector; and

a controller for transmitting a signal to the digital camera to turn on or off the same.

25 43. The image storage according to claim 42, wherein the controller is designed not to transmit the signal to turn on the digital camera if the digital camera has already been made on.

30 44. The image storage according to claim 42, wherein the controller is designed to transmit the signal to turn off the digital camera in response to a termination of the image data transmission to the image storage through the connector.

45. An image storage from which the stored image is retrievable comprising:

35 a memory for storing a plurality of image data taken by a digital camera;

a digital circuit for retrieving desired one of

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the plurality of image data from the memory;

a connector for electric connection with the digital camera for data transmission therefrom; and

a controller for controlling the image storage to
 5 receive the image data transmitted from the digital camera through the connector to store the same in the memory, the controller controlling the image storage to selectively receive the image data which is retrievable by the digital circuit.

10 46. An image storage from which the stored image is retrievable comprising:

a memory for storing a plurality of image data taken by a digital camera;

a digital circuit for retrieving desired one of
 15 the plurality of image data from the memory;

a connector for electric connection with the digital camera for data transmission therefrom; and

a controller for controlling the image storage to
 20 receive the image data transmitted from the digital camera through the connector to store the same in the memory;

wherein the controller includes a program to
 automatically delete an incomplete image data which
 may be caused by an interruption of the data
 25 transmission from the digital camera.

47. A television set capable of storing digital still image comprising:

a television circuit including a tuner for receiving a broadcast program;

30 a built-in memory of a large capacity for storing a plurality of digital still image data to be transmitted from a digital camera;

a monitor for selectively displaying one of the
 broadcast program from the television circuit and the
 35 still image from the built-in memory;

a docking station for the digital camera to detachably rest therein;

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a connector for electric connection with the digital camera in the docking station;

a controller to have the television set receive the digital still image data from the digital camera through the connector to store the same in the built-in memory; and

a detector to have the controller initiate to function upon detection of the digital camera in the docking station.

48. The television set according to claim 47, further comprising:

a second connector for electric connection with the digital camera in the docking station for providing the digital camera with a power therethrough for charging the digital camera;

and a second controller to have the television set automatically initiate to charge the digital camera in the docking station.

49. The television set according to claim 48, further comprising a container for the digital camera, wherein the docking station is located within the container.

50. The television set according to claim 49, within the docking station is separable from the container for replacement by another docking station.

51. The television set according to claim 49, within the container is capable of completely enclosing the digital camera therein.

52. The television set according to claim 47, further comprising a main switch, wherein the detector is active to have the controller initiate to function even if the main switch is made off.

53. The television set according to claim 48, further comprising a main switch, wherein the detector is active to have the controller initiate to function even if the main switch is made off.

54. The television set according to claim 47,

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further comprising a main switch, wherein the television set controls the monitor to display the information of the digital camera for at least a predetermined period after the main switch is made on.

5 55. The television set according to claim 48, further comprising a main switch, wherein the television set controls the monitor to display the information of the digital camera for at least a predetermined period after the main switch is made on.

10 56. The television set according to claim 55, wherein the information of the digital camera to be displayed is at least one of the existence of the digital camera in the docking station, the condition of transmission of the digital still image data from the
15 digital camera through the first mentioned connector, and the condition of charging the digital camera through the second connector.

20 57. The television set according to claim 55, wherein the information of the digital camera to be displayed is superimposed on the broadcast program at the monitor.

25 58. The television set according to claim 47, wherein the controller is responsive to a completion of the transmission of the digital still image from the digital camera to the television set to have the television set transmit a signal to the digital camera, which erase the digital still image data in the digital camera in response to the signal.

30 59. The television set according to claim 47, wherein the built-in memory further stores a program to control the television set.

60. The television set according to claim 47, further comprising:

 a main switch;

35 a mode switch for selecting between a first mode to have the monitor display the broadcast program from the television circuit and a second mode to have the

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monitor display the still image from the built-in memory; and

5 a memory controller for leaving the built-in memory in a rested condition when the main switch is turned on to activate the television circuit in the first mode, and for activating the built-in memory when the mode switch is changed into the second mode.

61. A television set capable of storing digital still image comprising:

10 a television circuit including a tuner for receiving a broadcast program;

a built-in memory of a large capacity for storing a plurality of digital still image data;

15 a monitor for selectively displaying one of the broadcast program from the television circuit and the still image from the built-in memory;

an input for the digital still image data for the storage in the built-in memory;

a main switch;

20 a mode switch for selecting between a first mode to have the monitor display the broadcast program from the television circuit and a second mode to have the monitor display the still image from the built-in memory; and

25 a memory controller for leaving the built-in memory in a rested condition when the main switch is turned on to activate the television circuit in the first mode, and for activating the built-in memory when the mode switch is changed into the second mode.

30 62. The television set according to claim 61, wherein the input includes:

35 a docking station for a digital camera to detachably rest therein, the digital camera providing the built-in memory with the digital still image data ; and

a connector for electric connection with the digital camera in the docking station for data

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transmission therefrom.

63. The television set according to claim 61, wherein the input includes a slot for a card storing the digital still image data.

5 64. The television set according to claim 61, further comprising a temporary memory for storing the digital still image read out from the built-in memory, wherein the monitor displays the still image on the basis of the temporary memory in the second mode.

10 65. The television set according to claim 64, wherein the temporary memory keeps the same digital still image data with the main switch on unless the digital still image data is replaced by another one, and loses the digital still image data with the main
15 switch turned off.

 66. The television set according to claim 64, wherein the monitor is controlled to instantly display the still image when the mode switch is changed into the second mode with any digital still image data stored
20 in the temporary memory

 67. The television set according to claim 66, wherein the monitor is controlled to display a predetermined still image when the mode switch is changed into the second mode with no digital still image
25 data stored in the temporary memory, the display of the predetermined still image being continued until the built-in memory actually becomes active after its activation.

 68. The television set according to claim 67,
30 wherein the predetermined still image is provided by a read only memory.

 69. The television set according to claim 67, wherein the predetermined still image is the broadcast program from the television circuit, the broadcast
35 program being replaced by the still image when the built-in memory actually becomes active.

 70. The television set according to claim 67,

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wherein the television set is turned on in the first mode in response to the main switch even if the main switch has been turned off in the second mode.

71. The television set according to claim 61,
5 wherein the memory controller is designed to keep the built-in memory active for a predetermined time period after the mode switch is changed from the second to first mode with the still image on the monitor instantly replaced by the broadcast program.

10 72. A television set capable of storing digital still image comprising:

a television circuit including a tuner for receiving a broadcast program;

15 a built-in memory of a large capacity for storing a plurality of digital still image data;

a monitor for selectively displaying one of the broadcast program from the television circuit and the still image from the built-in memory;

20 an input for the digital still image data for the storage in the built-in memory;

a main switch;

25 a mode switch for selecting between a first mode to have the monitor display the broadcast program from the television circuit and a second mode to have the monitor display the still image from the built-in memory;

a memory controller for switching the built-in memory between a rested condition and an active condition; and

30 a temporary memory for storing the digital still image read out from the built-in memory, the monitor displaying the still image on the basis of the temporary memory in the second mode,

35 wherein the monitor is controlled to instantly display the still image when the mode switch is changed from the first to second mode with any digital still image data stored in the temporary memory, regardless

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of the condition of the built-in memory.

73. A television set capable of storing digital still image comprising:

5 a television circuit including a tuner for receiving a broadcast program;

a built-in memory of a large capacity for storing a plurality of digital still image data;

10 a monitor for selectively displaying one of the broadcast program from the television circuit and the still image from the built-in memory;

an input for the digital still image data for the storage in the built-in memory;

a main switch;

15 a mode switch for selecting between a first mode to have the monitor display the broadcast program from the television circuit and a second mode to have the monitor display the still image from the built-in memory; and

20 a memory controller for switching the built-in memory between a rested condition and an active condition;

25 wherein the memory controller is designed to keep the built-in memory active for a predetermined time period after the mode switch is changed from the second to first mode with the still image on the monitor instantly replaced by the broadcast program.

74. A television set capable of storing image comprising:

30 a television circuit including a tuner for receiving a broadcast program;

a built-in memory of a large capacity for storing image;

35 a monitor for selectively displaying one of the broadcast program from the television circuit and the image from the built-in memory;

a main switch;

a mode switch for selecting between a first mode

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to have the monitor display the broadcast program from the television circuit and a second mode to have the monitor display the image from the built-in memory; and

5 a memory controller for leaving the built-in memory in a rested condition when the main switch is turned on to activate the television circuit in the first mode, and for activating the built-in memory when the mode switch is changed into the second mode.

10 75. A television set capable of storing digital still image comprising:

a television circuit including a tuner for receiving a broadcast program;

a memory for storing a plurality of digital still image;

15 a monitor for selectively displaying one of the broadcast program from the television circuit and the still image from the memory;

an input for receiving the digital still image; and

20 a controller to have the television set receive the digital still image through the input to store the same in the memory.

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